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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,508	08/30/2001	Warren M. Farnworth	3393.6US (97-324.6)	4342

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EXAMINER

FULLER, ERIC B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/944,508

Applicant(s)

FARNWORTH, WARREN M.

Examiner

Eric B Fuller

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED**FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.**

Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached Office Action.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-9.

Claim(s) withdrawn from consideration: _____.

8. ☐ The proposed drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant has indicated that the previous filing is an amendment filed under 37 C.F.R. 1.116. However, no amendment is included and no reference is made in the supporting arguments to a supposed amendment. Therefore, the filing is being treated as Request for Reconsideration. A telephone call was made to James Duzan on March 3, 2003 in which Mr. Duzan confirmed that the filing was indeed a Request for Reconsideration and not an amendment after final.

Response to Arguments

Applicant argues that there is support in the specification for the limitation that reads to control the temperature of the stream of solder. As support the applicant provides a paragraph in which a "temperature controller is connected to a reservoir so that the temperature of the liquid metal **held in the reservoir** can be kept at a desired temperature..." (emphasis added). The claim clearly reads to control the temperature of the stream. The specification only teaches controlling the temperature of the liquid in the reservoir. On page 8 of the remarks, applicant states that solder being heated to a desired temperature (equivalent to controlling temperature) in the supply chamber fails to read on controlling the temperature of the ejected solder. Therefore, the specification lacks support for "controlling the temperature of said stream of liquid solder".

Applicant argues that there is no suggestion in Watts that one would have been motivated to deflect droplets in two dimensions as opposed to only one. This is not found persuasive. First, Watts clearly provides a teaching that a pair of deflection plates, arranged perpendicularly to the Y-axis, provides deflection in the Y-axis. To provide two more plates perpendicular to the X-axis to cause deflection in the X direction is merely a duplication of parts. It has been established that duplication of parts is held to be obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

Additionally, the examiner has provided motivation for the duplication of parts in stating that deflection in two directions would eliminate the need for substrate movement. In support of this, it is noted that the applicant has stated in the paragraph spanning pages 6 and 7 of the remarks that because the substrate and the translation mechanism are much heavier than the droplets, positioning the droplets at a target is done more quickly and requires much less energy than moving the target. This concept of lighter objects requiring less energy to move is well within the scope of knowledge of one practicing in the art. Therefore, elimination of substrate movement, in order to use less energy, is sufficient motivation for one skilled in the art to have droplet deflection in two directions *In re Sernaker* 217 USPQ 1 (Fed. Cir. 1983); *In re Scheckler* 168 USPQ 716 (CCPA 1971).

Applicant argues that Watts would be practically inoperable with the modification suggested because areas below the gutter could not receive solder once the modification is made. This is not found persuasive. Watts does not teach that solder is

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deposited below the gutter. In fact, Watts, by using substrate movement, is hindered in which areas the substrate may receive solder. The Examiner's arguments in the final rejection show that by providing deflection in two directions as opposed to using substrate movement, more areas of the substrate are able to receive solder, therefore providing an additional obvious benefit of having deflection in two directions. As even more areas of the substrate are able to receive solder after the modification is made, the modification clearly is operable.

Applicant argues that Watts fails to teach that the temperature of the ejected solder is controlled. This is not found persuasive. Watts teaches that the solder is heated to a desired temperature in the supply chamber and then ejected. The temperature of the ejected droplets is high enough such that the solder is a liquid when it is ejected. Therefore, it is the position of the examiner that the temperature of the ejected solder is controlled at least to the extent that it is above the melting point of the metal as it is ejected, which is sufficient to read on the applicant's claim.

All other arguments pertain to points made above and apply to the argument applicant has made of Watts in view of Nakasu. Accordingly, the rejections made in the Office Action mailed on December 4, 2002 are maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B Fuller whose telephone number is (703) 308-6544. The examiner can normally be reached on Mondays through Thursdays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



EBF

March 3, 2003



**SHRIVE P. BECK
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